

Applicants : Philip O. Livingston and Friedhelm Helling
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- 78. (New) A composition which comprises:
- a) a conjugate of i) a ganglioside derivative which comprises an unaltered oligosaccharide part and an altered ceramide portion comprising a sphingosine base, to ii) Keyhole Limpet Hemocyanin or a derivative thereof comprising an ϵ -aminolysyl group;
- b) a saponin derivable from the bark of a Quillaja saponaria Molina tree; and
- c) a pharmaceutically acceptable carrier;
the relative amounts of such conjugate and such saponin being effective to stimulate or enhance antibody production in a subject;
wherein the ganglioside derivative is a derivative of a ganglioside selected from the group consisting of GM2, GM3, GD3, GD3 lactone, Q-acetyl GD3 and GT3; and wherein in the conjugate the ganglioside derivative is conjugated to Keyhole Limpet Hemocyanin or the derivative thereof through a C-4 carbon of the sphingosine base of the ceramide portion of the ganglioside derivative to the ϵ -aminolysyl group of Keyhole Limpet Hemocyanin or the derivative thereof.--
- 79. (New) The composition of claim 78, wherein the ganglioside derivative is a derivative of GM2 or (GD2).--
- 80. (New) The composition of claim 79, wherein the ganglioside derivative is a derivative of GM2.--
- 81. (New) The composition of claim 79, wherein the ganglioside derivative is a derivative of GD2.--

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- 82. (New) The composition of claim 78, wherein the ganglioside derivative is conjugated to Keyhole Limpet Hemocyanin.--
- 83. (New) The composition of claim 78, wherein the saponin is QS-21.--
- 84. (New) The composition of claim 78, wherein the amount of the conjugate is an amount between about 1 μ g and about 200 μ g.--
- 85. (New) The composition of claim 84, wherein the amount of the conjugate is an amount between about 50 μ g and about 90 μ g.--
- 86. (New) The composition of claim 85, wherein the amount of the conjugate is about 70 μ g.--
- 87. (New) The composition of claim 78, wherein the amount of the conjugate is an amount between about 1 μ g and about 10 μ g.--
- 88. (New) The composition of claim 87, wherein the amount of the conjugate is about 7 μ g.--
- 89. (New) The composition of claim 78, wherein the amount of the saponin is an amount between about 10 μ g and about 200 μ g.--
- 90. (New) The composition of claim 89, wherein the amount of the saponin is about 100 μ g.--
- 91. (New) The composition of claim 89, wherein the amount of the saponin is about 200 μ g.--

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--92. (New) The composition of claim 78, wherein the molar ratio of the ganglioside derivative to Keyhole Limpet Hemocyanin or the derivative thereof is between about 200 and about 1400.--

--93. (New) A method of stimulating or enhancing antibody production in a subject which comprises administering to the subject an effective amount of a composition which comprises:

- a) a conjugate of i) a ganglioside derivative which comprises an unaltered oligosaccharide part and an altered ceramide portion comprising a sphingosine base, to ii) Keyhole Limpet Hemocyanin or a derivative thereof comprising an ϵ -aminolysyl group;
 - b) a saponin derivable from the bark of a Quillaja saponaria Molina tree; and
 - c) a pharmaceutically acceptable carrier;
- the relative amounts of such conjugate and such saponin being effective to stimulate or enhance antibody production in the subject;
- wherein the ganglioside derivative is a derivative of a ganglioside selected from the group consisting of GM2, GM3, GD3, GD3 lactone, O-acetyl GD3 and GT3; and wherein in the conjugate the ganglioside derivative is conjugated to Keyhole Limpet Hemocyanin or the derivative thereof through a C-4 carbon of the sphingosine base of the ceramide portion of the ganglioside derivative to the ϵ -aminolysyl group of Keyhole Limpet Hemocyanin or the derivative thereof, so as to thereby stimulate or enhance antibody production in the subject.--

--94. (New) A method of preventing relapse of a cancer in a subject which comprises administering to the subject

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cont

Sub
I 2

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CGC

~~an effective cancer relapse preventing amount of a composition which comprises:~~

a) ~~a conjugate of i) a ganglioside derivative which comprises an unaltered oligosaccharide part and an altered ceramide portion comprising a sphingosine base, to ii) Keyhole Limpet Hemocyanin or a derivative thereof comprising an ϵ -aminolysyl group;~~

b) ~~a saponin derivable from the bark of a Quillaja saponaria Molina tree; and~~

c) ~~a pharmaceutically acceptable carrier;~~

~~the relative amounts of such conjugate and such saponin being effective to stimulate or enhance antibody production in the subject;~~

~~wherein the ganglioside derivative is a derivative of a ganglioside selected from the group consisting of GM2, GM3, GD3, GD3 lactone, O-acetyl GD3 and GT3; and~~

~~wherein in the conjugate the ganglioside derivative is conjugated to Keyhole Limpet Hemocyanin or the derivative thereof through a C-4 carbon of the sphingosine base of the ceramide portion of the ganglioside derivative to the ϵ -aminolysyl group of Keyhole Limpet Hemocyanin or the derivative thereof, so as to thereby prevent relapse of a cancer in the subject.--~~

--95. *Sub 44*

~~(New) A method of preventing or treating a cancer in a subject which comprises administering to the subject an effective cancer preventing or treating amount of a composition which comprises:~~

a) ~~a conjugate of i) a ganglioside derivative which comprises an unaltered oligosaccharide part and an altered ceramide portion comprising a sphingosine base, to ii) Keyhole Limpet Hemocyanin or a derivative thereof comprising an ϵ -aminolysyl group;~~

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b) a saponin derivable from the bark of a Quillaja saponaria Molina tree; and
c) a pharmaceutically acceptable carrier;
the relative amounts of such conjugate and such saponin being effective to stimulate or enhance antibody production in the subject;
wherein the ganglioside derivative is a derivative of a ganglioside selected from the group consisting of GM2, GM3, GD3, GD3 lactone, O-acetyl GD3 and GT3; and wherein in the conjugate the ganglioside derivative is conjugated to Keyhole Limpet Hemocyanin or the derivative thereof through a C-4 carbon of the sphingosine base of the ceramide portion of the ganglioside derivative to the ϵ -aminolysyl group of Keyhole Limpet Hemocyanin or the derivative thereof, so as to thereby prevent or treat a cancer in the subject.--

Sub I¹

--96. (New) The method of claim 94 or 95, wherein the cancer is of epithelial origin.--

Sub I⁴

--97. (New) The method of claim 94 or 95, wherein the cancer is of neuroectodermal origin.--

--98. (New) The method of claim 97, wherein the cancer of neuroectodermal origin is a melanoma.--

--99. (New) The method of any one of claims 93-95, wherein the administering is effected at two or more sites.

Sub I⁵

--100. (New) The method of claim 99, wherein the administering is effected at three sites.